1/2 012 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EFFECT OF TECHNOLOGICAL FACTORS ON THE QUALITY OF OXYGEN CONVERTER STEEL -U-

AUTHOR--AFANASYEV, S.G., YUGOV, P.I., DUKHANIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(1), 17-20

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--OXYGEN CONVERSION STEEL, OXYGEN, BIBLIOGRAPHY, METALLURGIC FURNACE, STEEL MANUFACTURE PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1937/0141 STEP NO--UR/0133/70/030/001/0017/0020

CIRC ACCESSION NO--AP0103820

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0105817

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE ENERGY OF O AND OF THE BOILING GAS BUBBLES ON THE MIXING INTENSITY IN THE METAL BATH IN A 10 TON CONVERTER WAS STUDIED DURING VARIOUS PERIODS OF CONVERTER OPERATION. AN EQUATION IS DERIVED FOR THE ENERGY (N) WHICH IS GIVEN UP BY THE O TO THE METAL BATH AT THE MOMENT OF THEIR CONTACT: N EQUALS 0.385 RW PRIME3 D PRIME2, WHERE R IS THE D. OF THE O STREAM IN KG-M PRIME3, W IS THE RATE OF THE STREAM AT ITS AXIS IN M-SEC, AND D IS THE DIAM. OF THE GAS STREAM AT ITS CONTACT WITH THE METAL BATH IN M. ANOTHER EQUATION IS DERIVED FOR THE MIXING ENERGY ORIGINATING FROM GAS BUBBLES (N SUBC) AS WELL AS FOR THE MAX. DEPTH FROM WHICH THESE GAS BUBBLES RISE. THE CALCNS. SHOWED THAT DURING THE 1ST 20-5PERCENT OF THE BLAST TIME THE GAS BUBBLES FLOAT UP FROM A LEVEL 20PERCENT OF BATH DEPTH, WHILE DURING THE REMAINING TIME THE GAS BUBBLES RISE FROM THE BOTTOM OF THE BATH. IN EVALUATING THE MIXING EFFECT, IT IS NECESSARY TO TAKE INTO ACCOUNT THE ENERGY GIVEN UP BY THE GAS STREAM TO THE METAL BATH (ESP. IMPORTANT AT THE START OF THE BLAST OPERATION).

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--MIXING IN AN OXYGEN CONVERTER BATH -U-

AUTHOR-(03)-BLINOV, K.A., AFANASYEV, S.G., KVITKO, M.P.

COUNTRY OF INFO--USSR

A

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MER. 1970, 13(1) 39-42

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OXYGEN, BLAST FURNACE, MOLTEN METAL, MATERIAL MIXING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0948 STEP NO--UR/0148/70/013/001/0039/0042

CIRC ACCESSION NO--AT0105817

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132909

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS ARE PRESENTED OF AN INVESTIGATION OF DEPHOSPHORIZATION CONDITIONS IN A 10 TON O CONVERTER DURING BLOWING OF LOW MN PIG IRON. LIMESTONE (85-90PERCENT CAO) WAS USED AS THE SLAG FORMING MATERIAL. A PROTION OF THE MELT WAS PREPD. BY THE USE OF MN ORE AND, FOR COMPARISON PURPOSES, ON BASIC PIG IRON CONTG. 1.2PERCENT MN. FOR ALL 3 VARIANTS THE LARGEST AMT. OF MELT CORRES NDS TO THE MIN. P CONCNS. IN THE METAL (LESS THAN 0.020PERCENT), I.E., ALL 3 VARIANTS PROVIDE FOR OPTIMUM CONDITIONS OF SUCCESSFUL DEPHOSPHORIZATION. THE FUNDAMENTAL TECH. FACTOR S ETG. THE DEGREE OF DEPHOSPHORIZATION DURING THE CONVERSION OF LOW MN PIG IRON ARE THE STATE OF OXION. AND THE BASICITY OF THE SLAG. DECREASING THE MN CONTENT IN THE METAL HELPS A HQVE LOWER P CONCNS. WITH INCREASED MNO CONCN. IN THE SLAG TO A GIVEN LIMIT THE DEPHOSPHORIZATION OF THE METAL OUGHT TO IMPROVE, WHEREUPON IT SHOULD AGAIN DETERIORATE. A REDN. OF P IN MELTS CONTG. MN ORE IS OBSD. AND AN ATTEMPT IS MADE TO EXPLAIN THIS PHENOMENON. A DECREASE IN THE SLAG QUANTITY PRESENT WORSENS THE DEPHOSPHORIZATION CONDITIONS, SINCE AT THE SAME DISTRIBUTION COEFF. THE AMT. OF P REMOVED INTO THE SLAG DECREASES. THE REMOVAL OF P IS ALSO INHIBITED WHEN MN IS BEING REDUCED DURING THE COURSE OF THE PROCESS.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DEPHOSPHORIZATION OF METAL WITH LOW CONCENTRACTIONS OF MANGANESE IN A CONVERTER BATH -U-

AUTHOR-(03)-YUGOV, P.I., AFANASYEV, S.G., KVITKO, M.P.

COUNTRY OF INFO--USSR

A

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 68-71

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--REFINING FURNACE, METAL OXYGEN CONVERSION, LIMESTONE, PIG IRON, STEEL PRODUCTION, PHOSPHOROUS, MANGANESE CONTAINING ALLOY, METALLURGIC SLAG, MANGANESE OXIDE, ALLOY COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0819 STEP NO--UR/0148/70/013/004/0068/0071

CIRC ACCESSION NO--AT0132909

UNCLASSIFIED

USSR

AFANAS'YEV, S. G., Stal', No 2, Feb 71, pp 128-129

of oxygen-converted steel production and improving the quality of the metal. Short descriptions are given of the reports.

2/2

Conferences

USSR

UDC 669.185.1.053.7

AFANAS'YEV, S. G.

"All-Union Conference of Converter Personnel"

Moscow, Stal', No 2, Feb 71, pp 128-129

Abstract: A conference of converter personnel, i.e., those involved in the production of oxygen-converted steel, was held in November 1970 in Lipetsk. Known as the Second All-Union Conference of Converter Personnel, it was organized by the Ministry of Ferrous Metals of the USSR, the Science Research Society of Ferrous Metals, and the Central Committee of the Union of Working Industrial Metallurgists; the conference was attended by some 300 people representing 65 organizations and enterprises. The reports presented at the conference discussed problems in perfecting the technology of oxygen-converted steel production, which amounted to 15.2 million tons in 1969 and 20 million tons in 1970, improving the quality and adding to the varieties of this type of steel, the comparative economic efficiency of steel alloying processes, and further improvements in the production process. The conference's fundamental theme was raising the efficiency

1/2

USSR UDC: 621.396.96.004

LATINSKIY, S. M., SHARAPOV, V. I., KSYONZ, S. P., AFANAS'YEV, S. S.

"Theory and Practice in Radar Systems Operation"

Teoriya i praktika ekspluatatsii radiolokatsionnykh sistem (cf. English above), Moscow, "Sov. radio", 1970, 432 pp, ill. 1 r. 20 k. (from EZh--Radiotekhnika, No 12, Dec 70, Abstract No 12G62)

Translation: Light is thrown on some problems in the theory and practice of radar systems operation. Methods of maintaining the parameters of radar systems are considered: effective range, precision in determining the coordinates of the target, reliability on the given level. Considerable attention is given to the problem of maintaining reliability in the face of failures. Some phases of technical diagnosis are outlined and examples are given of setting up programs for troubleshooting and for monitoring radar systems for operability. Principles and methods are described for effective adjustment and regulation of radar equipment. Considerable space is devoted to the use of quantitative methods in solving problems of utilization. The book is written for engineers involved in the design, production and use of radar equipment as well as for students of advanced courses in radio engineering schools. 245 illustrations, 10 tables, bibliography of 69 titles. Annotation.

1/1

USSR

UDC 669.184.2.66-25K

ISAYEV, V. A., AFANAS'YEV, S. G., and STEPANOV, V. I.

"Specifics of the Kinetics of Desulfuration During Production of Steel in a Rotating Converter"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 104-107

Translation: Problems of the kinetics of desulfuration of metal during production of steel in a 3 T converter with two axes of rotation are studied.

It is established that a significant role in the process of desulfuration in the rotating converter is played by transition of sulfur to the gas phase, determined by the oxidation potential of the atmosphere over the converter bath. About half of all sulfur extracted from the metal is converted to the gas phase as the metal is blown in the rotating converter. The transition of sulfur to the gas phase is also determined by the distribution of sulfur between slag and metal, requiring improvement of the degree of contact between metal and slag for successful desulfuration. 5 figures; 1 biblio. ref.

1/1

USSR

UDC 669.184.244.66

BLINOV, K. A., VERBITSKIY, YA. D., AFANAS'YEV, S. G., KVITKO, M. P., and FILATOV, YU. V.

"Study of the Interaction of the Gas Stream With the Liquid Bath on Cold Models"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals-Collection of Works,) No 75, Metallurgiya Press, 1970, pp 89-93

Translation: Problems of the formation and removal of spray from the throat of a converter and along its height are discussed. Experiments were performed using a cold model of a 10 T converter. The liquid modeling the metal was ordinary water.

It was established that the nature of the change in spray transfer for all types of heads studied was identical, although the rate of reduction of the quantity of spray in the throat of the model was higher upon transition to higher oxygen flow rates for a 13-nozzle tuyere than for other types. The characteristics produced indicate that when the oxygen converter process is intensified, tuyere designs should be used providing the maximum breakup of the gas stream, in order to avoid splashing and loss of metal. 5 figures; 6 biblio. refs.

1/1

USSR

UDC 669.184.244.66

BLINOV, K. A., VERBITSKIY, YA. D., AFANAS'YEV, S. G., KVITKO, M. F., and FILATOV, YU. V.

"Study of the Interaction of the Gas Stream With the Liquid Bath on Cold Models"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals-Collection of Works,) No 75, Metallurgiya Press, 1976, pp 89-93

Translation: Problems of the formation and removal of spray from the throat of a converter and along its height are discussed. Experiments were performed using a cold model of a 10 T converter. The liquid modeling the metal was ordinary water.

It was established that the nature of the change in spray transfer for all types of heads studied was identical, although the rate of reduction of the quantity of spray in the throat of the model was higher upon transition to higher oxygen flow rates for a 13-nozzle tuyere than for other types. The characteristics produced indicate that when the oxygen converter process is intensified, tuyere designs should be used providing the maximum breakup of the gas stream, in order to avoid splashing and loss of metal. 5 figures; 6 biblio. refs.

1/1

USSR

UDC 669.184.2.66-25K

ISAYEV, V. A., AFANAS'YEV, S. G., and STEPANOV, V. I.

"Specifics of the Kinetics of Desulfuration During Production of Steel in a Rotating Converter"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 104-107

Translation: Problems of the kinetics of desulfuration of metal during production of steel in a 3 T converter with two axes of rotation are studied.

It is established that a significant role in the process of desulfuration in the rotating converter is played by transition of sulfur to the gas phase, determined by the oxidation potential of the atmosphere over the converter bath. About half of all sulfur extracted from the metal is converted to the gas phase as the metal is blown in the rotating converter. The transition of sulfur to the gas phase is also determined by the distribution of sulfur between slag and metal, requiring an increase of the degree of contact between metal and slag for successful desulfuration. 5 figures; 1 biblio. ref.

1/1

USSR

GORSHKOV, A. I., et al, Svarochnoye Proizvodstvo, No 3, Mar 73, pp 20-22

surpass the base metal in impact strength and bend angle. Weld joints 3-5 mm thick made by manual and automatic welding with welding rods VT20-2sv and SPT-2 have a tensile strength equal to 90% of the base metal strength and an impact strength 1.6-2 kgm/cm^2 higher then the base metal impact strength. When welding in chambers without an auxiliary system of argon purification the values of partial oxygen and nitrogen pressures exceed equilibrium values so that there is an additional increase in the oxygen and nitrogen content in the seam metal and a decrease of hydrogen content. 2 figures, 4 tables.

2/2

USSR UDC 621.791:62-784.5:621.78.062.3:669.295

GORSHKOV, A. I., and MATYUSHKIN, B. A., Candidates of Engineering Sciences; OL'KHOVIK, R. G., AFANAS'YEV, P. S. (deceased), and BEKRENEVA, YE. V., Engineers

"Some Problems of Welding Alloy VT20 in a Controlled Atmosphere"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 73, pp 20-22

Abstract: The mechanical properties of weld joints and the effect of the protective atmosphere on the gas content in the seam metal during manual welding in a chamber with a controlled atmosphere were investigated in this work. Alloy VT20 sheet, 1-5 mm thick, was used in which the alloying element content and impurity content were found in the following limits (in %): 5.7-6.4 Al, 0.8-1.2 Mo, 0.55-1.22 V, 1.9-2.4 Zr, 0.005-0.01 H_2, 0.07-0.1 O_2, and 0.02-0.03 N_2. Welding rods VT20-2sv of the Ti-Al-Zr-Mo-V system and SPT-2 of the Ti-Al-Zr-V system with a diameter of 2.5 mm were used which had the following chemical composition: VT20-2sv -- 3.98 Al, 2 Zr, 0.83 Mo, 0.91 V, 0.0015 H_2, 0.11 O_2 and 0.02 N_2; SPT-2 -- 4.74 Al, 1.35 Zr, 1.92 V, 0.004 H_2, 0.07 O_2 and 0.04 N_2. It was determined that weld joints of alloy VT20 made by automatic and manual welding are close to the base metal in strength and

1/2

USSR

UDC 539.4

AFANAS'YEV, P. D., SCHUL'GA, N. G., and YAREMKEVICH, S. K., L'vov

"Thermomagnetic Treatment of Fe-Ni-Al-Co Alloys With Low and Medium Content of Cobalt"

Moscow, Fizika i Khimiya Obrabotki Metallov, No 1, Jan-Feb 71, pp 140-143

Abstract: Results are presented of an investigation of the effectiveness of the thermomagnetic treatment of Fe-Ni-Al-Co alloys with low and medium cobalt content. The growth of magnetic properties Br and BH_{max} after thermomagnetic treatment ranges between 10-15% for alloys with 2-6% cobalt and between 20-25% for Fe-Ni-Al-Co alloys with 12-15% cobalt. The effectiveness of thermomagnetic treatment can be increased considerably by raising the Curie point of alloys with 12-15% cobalt at the expense of a decrease in nickel content to 17-17.3% and aluminum to 7-7.5% and an increase of silicon to 0.5-0.8%. An oscillographic method for determining the Curie point of stable magnets is described.

1/1

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137666

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR INCIDENT E ENERGIES OF 100, 150, AND 200 MEV, THE ANGULAR AND ENERGY DISTRIBUTIONS OF P ARE PLOTTED AT 15-60 MEV, 20-150DEGREES. AT 40DEGREES THE 20-40 MEV P CURVES RISE WITH (1.0-0.8) TIMES 10 PRIME NEGATIVE31 CM PRIME2-SR-MEV PRIME2. C TARGETS OF 82.3 AND 146 MG-CM PRIME2 INDICATED SMALL CONTRIBUTIONS FROM PHOTONS.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ELECTRODISINTEGRATION OF CARBON 12 BY HIGH ENERGY ELECTRONS -U-

AUTHOR-(02)-VYSOTSKAYA, A.V., AFANASYEV, N.G.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 942-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ANGULAR DISTRIBUTION, CARBON ISOTOPE, ELECTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0581 STEP NO--UR/0367/70/011/005/0942/0945

CIRC ACCESSION NO--AP0137666

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0043467

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF THE MEASUREMENTS OF THE INELASTIC SCATTERING OF 690-, 970-, AND 1115-MEV E ON PRIME12 C AND PRIME28 SI NUCLEI AT 16-40DEGREES ARE PRESENTED. THE SCATTERED E WERE DETECTED BY MEANS OF CHERENKOV COUNTER, THE CONSTRUCTION OF WHICH IS DESCRIBED. NO CORRECTION FOR THE INFLUENCE OF PRIME13 C AND PRIME29,30 SI CONTENT IN THE TARGETS OF NATURAL C (4.97 TIMES 10 PRIME22 NUCLEI-CM PRIME2) AND OF NATURAL SI (1.51 TIMES 10 PRIME12 NUCLEI-CM PRIME2) UPON THE CROSS SECTIONS VALUES WAS MADE BECAUSE OF THEIR LITTLE INFLUENCE. THE GAINED RESULTS WERE ANALYZED BY USING THE THEORY OF THE QUASI ELASTIC SCATTERING. IN ORDER TO MAKE THE PRESENT RESULTS COMPATIBLE WITH THE ELASTIC E SCATTERING ON THE SAME NUCLEI, IT IS NECESSARY TO ACCOUNT FOR INEQUALITY OF POTENTIALS IN DIFFERENT NUCLEAR SHELLS AS WELL AS THE DYNAMICAL CORRELATIONS OF N IN NUCLEI. FACILITY: FIZ.-TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--QUASI ELASTIC SCATTERING OF HIGH ENERGY ELECTRONS ON NUCLEONS OF CARBON 12 AND SILICON 28 -U-

AUTHOR-(05)-DEMENTIY, S.V., AFANASYEV, N.G., ARKATOV, I.M., VLASENKO, V.G., GOLDSHTEYN, V.A.

COUNTRY OF INFO--USSR

A

SOURCE--YAD. FIZ. 1970, 11(1), 19-28

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON SCATTERING, INELASTIC SCATTERING, CARBON ISOTOPE, SILICON ISOTOPE, CHERENKOV SCATTERING, HIGH ENERGY PARTICLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0175 STEP NO--UR/0367/70/011/001/0019/0028

CIRC ACCESSION NO--AP0048467

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120589

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECTRA OF INELASTIC E SCATTERING WERE MEASURED AT THE INITIAL ENERGY OF 1150 MEV IN THE ANGULAR RANGE 25-60DEGREES. THE MONOCHROMATIZED BEAM OF E FROM A LINEAR ACCELERATOR FELL ON THE HARD C LAYER 0.02 RADIATION LENGTH THICK. THE SECONDARY PARTICLES WERE ANALYZED BY MEANS OF A MAGNETIC SPECTROMETER; IDENTIFICATION AND COUNTING OF PARTICLES WAS PERFORMED BY THE SHOWER COUNTER CONSISTING OF PB GLASS AND PHOTOMULTIPLIER. EACH SPECTRUM SHOWS 2 PEAKS, ONE OF WHICH IS TREATED AS QUASI ELASTIC SCATTERING AND THE OTHER AS THE PION PRODUCTION ON THE PRIME12 C N. THE PION ELECTROPRODUCTION CROSS SECTION CAN BE DESCRIBED AS A SUM OF CROSS SECTIONS FOR THE ELECTROPRODUCTION OF FREE N. THE DEPENDENCE OF THE CROSS SECTION ON THE 3 MOMENTUM TRANSFER IN THE ELECTROPRODUCTION PEAK ALLOWS THE MAIN REGULARITIES TO BE ESTABLISHED OF THE DELTA SUB1238 ISOBAR ELECTROPRODUCTION OF A FREE RHO. THE MEASUREMENTS LEADS TO THE CONCLUSION THAT THE QUASI ELASTIC SCATTERING AND ELECTROPRODUCTION OF PIONS ON N PLAYS THE DOMINANT ROLE. THE QUANT. AGREEMENT OF THEORY AND EXPTL. RESULTS IS SATISFACTORY ONLY AT SMALL TRANSFERED MOMENTUMS (25 AND 35DEGREES). AT LARGE MOMENTUMS THE PARAMETERS CHARACTERIZING THE DIFFERENCE BETWEEN THE FREE AND NUCLEUS N HAS TO BE TAKEN INTO ACCOUNT.

FACILITY: FIZ.-TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PION ELECTROPRODUCTION ON CARBON -U-

AUTHOR-(05)-TITOV, YU.I., STEPULA, YE.V., AFANSAYEV, N.G., AKHMEROV, R.V., BYVALIN, S.A.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(2), 257-65

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON SCATTERING, INELASTIC SCATTERING, HIGH ENERGY PARTICLE, CARBON, SECONDARY EMISSION, PION, SPECTRUM ANALYSIS, DIFFERENTIAL CROSS SECTION, PARTICLE PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1946 STEP NO--UR/0185/70/015/002/0257/0265

CIRC ACCESSION NO--AP0120589

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119269

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABS. MEASUREMENTS HAVE BEEN PERFORMED FOR THE ELASTIC SCATTERING OF 225 MEV E ON PRIME 58,60,64 NI AND PRIME 112,118 SN ISOTOPES. THE EXPTL. RESULTS WERE ANALYZED BY USING THE HIGH ENERGY APPROXN. FOR THE FERMI TYPE CHARGE D. DISTRIBUTION. THE DERIVED ROOT MEANSQUARE RADII SHOW A CORRELATION BETWEEN THE CHANGE OF THE CHARGE RADIUS OF THE ISOTOPES AND THE ORBITAL MOMENTA (OR N SUBSHELL FILLING) OF THE ADDED N. THE RADII, DEDUCED FROM THE TRANSITION ENERGIES OF MUONIC ATOMS, TURN OUT TO BE SMALLER. AGREEMENT BETWEEN THE 2 EXPTS. CAN BE REACHED UNDER THE ASSUMPTION THAT THE CHARGE D. HAS A PRONOUNCED MAX. IN THE CENTRAL REGION OF THE PRIME58 MI NUCLEUS AND IS LESS PRONOUNCED FOR PRIME118 SN. FACILITY: PHYS. TECH. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ELASTIC ELECTRON SCATTERING ON NICKEL 58, NICKEL 60, NICKEL 64, AND TIN 112, TIN 118 ISOTOPES -U-
AUTHOR-(05)-KHVASTUNOV, V.M., AFANASEV, N.G., AFANASEV, V.D., GULKAROV, I.S., OMELAENKO, A.S.
COUNTRY OF INFO--USSR

SOURCE--NUCL. PHYS. A 1970, 146(1), 15-25

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ELECTRON SCATTERING, ELASTIC SCATTERING, NICKEL ISOTOPE, TIN ISOTOPE, CHARGE DENSITY, ATOMIC RADIUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0274 STEP NO--NE/0000/70/146/J01/0015/0025

CIRC ACCESSION NO--AP0119269
UNCLASSIFIED

USSR

UDC: 531.787.4

AFANAS'YEV, M. M.

"Eliminating Noise From a Slip Ring in the Tensometry of Rotating Objects"

Moscow, Izmeritel'naya tekhnika, No 2, 1972, pp 40-44

Abstract: The most widely used method for measuring the deformations of a rotating machine parts is based on the use of wire tensoresistors oriented in the direction of the chief deformations on the surface of the part and used for recording input signals. Because this method introduces complications, the author proposes tensometric systems which reduce the effect of transient resistances and parasitic thermoelectromotive forces, and thus permit a reduction in the stringency of demands made on the slip ring and a simplification of its construction. The article analyzes the errors introduced by variations of the transient resistances and the thermoelectric effects produced by slip-ring operation, and the degree of the effect of the thermo-emf and the current noise generated by the slip ring are determined. Circuits for reducing these effects are presented and examined. They were tested on models of rotating shafts with linear velocities of up to 50 m/s and on drive shafts of type KMD-22-3/40 industrial cranes.

1/1

2/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105150

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONCNS. OF (NH SUB4) SUB2 SO SUB4 WERE DETD. IN THE RANGE OF 1-4PERCENT, CONTINUOUSLY BY THE TITLE APP. WITH A LOW FREQUENCY CONTACTLESS ELECTRODE, WITH AN ACCURACY OF PLUS OR MINUS 0.2PERCENT. THE SCHEME OF THE APP. IS GIVEN.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--MEASUREMENT OF THE CONCENTRATION OF A REGENERATION SOLUTION OF AMMONIUM SULFATE IN A CHEMICAL WATER TREATMENT PLANT OF A THERMAL POWER

AUTHOR-(04)-YERMAKOV, YU.V., GLUKHOV, V.S., AFANASYEV, M.I., PERTSEVA, L.V.

COUNTRY OF INFO--USSR

SOURCE--ENERGETIK 1969, 17(8), 14-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, ENERGY CONVERSION (NON-PROPULSIVE)

TOPIC TAGS--WATER REGENERATION, AMMONIUM SULFATE, SOLUTION CONCENTRATION, ELECTRIC CONDUCTIVITY MEASUREMENT, ELECTRIC POWER PLANT/(U)KK8 CONDUCTIVITY METER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

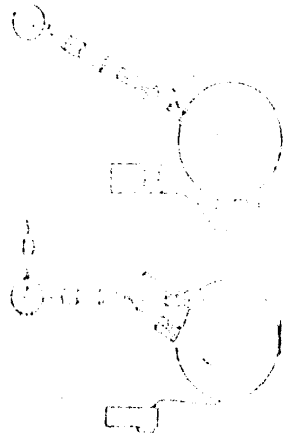
PROXY REEL/FRAME--1988/0051 STEP NO--UR/0091/69/017/008/0014/0015

CIRC ACCESSION NO--AP0105150

UNCLASSIFIED

USSR

APANAS'YEV, L. F., APANAS'YEV, A. F., USSR Author's Certificate No [illegible]



1/2

USSR

UDC: 535.69.083.6

AFANAS'YEV, L. F., AFANAS'YEV, A. F.

"A Polarization Color Comparator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 74, Author's Certificate No 333477, Division G, filed 29 Jul 71, published 21 Mar 72, p 169

Translation: This Author's Certificate introduces a polarization color comparator designed chiefly for measuring the color difference of diamonds. The device contains a light source, an optical system with modulator, a cartridge with light filter, a photocell and an electronic circuit. As a distinguishing feature of the patent, the discrimination sensitivity of the device is improved by equipping the optical system with a polarizer and two analyzers whose axes are turned through an angle of 90° relative to one another and inclined at the Brewster angle to the test surface.

1/2

2/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0120197

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIELEC. CHARACTERISTICS AND ELEC. CAPACITY OF AL-CEO SUB2-AL STRUCTURES WERE STUDIED IN THE RANGE 20-160DEGREES. THE EFFECT OF THERMAL TREATMENTS IS POINTED OUT.

FACILITY: TAGANROG. RADIOTEKH. INST., TAGANROG, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DIELECTRIC FILMS BASED ON CERIUM DIOXIDE -U-

AUTHOR-(03)-AFANASYEV, K.L., ZAICHKIN, N.N., SACHAVSKIY, A.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 156-8

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--DIELECTRIC LAYER, DIELECTRIC MATERIAL, CERIUM OXIDE, ALUMINUM COMPOUND, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1404 STEP NO--UR/0139/70/013/002/0156/0158

CIRC ACCESSION NO--AT0120197

UNCLASSIFIED

USSR

UDC 621.371.332.3:551.463.7:528.3

AFANAS'YEV, V.L., BOL'SHAKOV, E.V., GARNAKER'YAN, A.A., LEPENDIN, L.F., LOBACH, V.T., TIMCHOV, V.V., CHEREPANTSEV, S.F.

"To The Problem Of Measuring The Height Of Sea Waves By The Radar Method From Aircraft"

Tr. Tagenrog. radiotekhn. in-ta (Works Of The Taganrog Radio Engineering Institute), 1971, No 22, pp 148-158 (from RZh: Radiotekhnika, No 2, Feb 72, Abstract No 2G15)

Translation: The theoretical bases are stated of the radar method of measuring the height of waves. It is shown that in order to increase the precision of measurement it is necessary to have a tunable transmitter or some fixed radiation frequencies (3 are sufficient). A measuring unit is described, constructed on the basis of a pulse radar station of the meter range; technical data are presented. An analysis of the results obtained during flight tests shows that the discrepancy between these results and the data obtained with the aid of a wave graph does not exceed 10--12 percent. The defect of the method is the impossibility of determining the character of the waves and the length of a wave. 1 ill. 2 tab. 4 ref. N.S.

1/1

USSR A UDC 621.7:539.378:621.73.073

AFANAS'YEV, I. V., Candidate of Technical Sciences, PROFIMOV, A. P. Engineer

"Diffusion Welding of Die Elements"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 70, pp 34-36

Abstract: A method for diffusion welding of die elements has been developed. Two die elements, made of 45 and R9M5 steels, were successfully welded together in a vacuum furnace. The studies show that the best welding results are obtained under the following conditions: annealing temperature 915°C, specific pressure on the parts being welded 0.5 kg/mm^2, holding time 5 min, and vacuum 1.10^{-5} mm Hg. The contact surfaces should have a class-6 finish. The strength of welds obtained under these conditions was 45 kg/mm^2, and macroplastic deformation not more than 0.5 percent.

1/1

USSR

AFANAS'YEV, I. V., et al, Avtomaticheskaya svarka, Sept 71, no 9, pp 67-68

It is suggested that a source of this type built from tantalum carbide may be heated in outer space vacuum up to 3500°K. Arrangements for convenient transportation and reducing the weight of the system are discussed. The long-range potentialities of solar radiation welding are stressed.

2/2

USSR UDC: 621.791:621.472

AFANAS'YEV, I. V., SIDOROV, N. G., KRICHEVSKIY, YE. YU., and FILIMONOV, V. I.

"Use of Solar Ray Energy for the Welding of Materials"

Kiev, Avtomaticheskaya svarka, Sept 71, no 9, pp 67-68

Abstract: Experiments involving the use of solar radiation heating units for welding aluminum, steel, and titanium indicate the following: radiant energy is capable of bringing up various materials to the point of melting and welding; effective results are facilitated by mirrors shaped to optical precision; the ultimate thickness of the metal being welded is determined by its thermophysical properties; increasing the absorption coefficient of solar rays by the weldpool will reduce radiant energy losses in welding; the bead width is determined by the focal spot diameter: the smaller the diameter, the deeper the penetration. Figures in the original article give an over-all view of a solar high-temperature furnace with an inclined optical concentrator axis, a schematic of the URAN-1 solar radiation heating unit, and finally a schematic drawing of a solar radiation welding unit incorporating a concentrator for parallel solar rays to the focal point.

USSR

UDC 621.382.2

AFANAS'YEV, I.I. [Institute Of Electronics And Computing Techniques, AS, Latvian SSR]

"The Influence Of Geometry And Rate Of Surface Recombination On The Diffusion Current Of Micro-Alloy Diodes"

Izv. Akademii Nauk Latviyskoy SSR: Seriya fizicheskikh i tekhnicheskikh nauk (Bulletin Of The Academy Of Sciences, Latvian SSR: Physics And Technical Sciences Series), No 4, 1972, pp 41-51

Abstract: A structure shown in a previous paper [Ye.Ya.Finkel'shteyn, I.I. Afanas'yev -- Izv. AN Latv. SSR, Ser.fiz. i tekhn.nauk, 1970,3,93] is taken as the model of a micro-alloy diode with a semi-unlimited base. Expressions are obtained for calculation of the concentration of injected minority charge carriers and the diffusion current of micro-alloy diodes with the three-dimensional structure of the diodes and the surface recombination of the free part of the base taken into account. Prevailing conditions are determined for the volume or the surface components of the diffusion current. A calculation is made for the case of a low injection level and the diode base which considerably exceeds the diffusion length. The discussion of the results of the work includes a series of graphs. A table shows the diffusion current of surface recombination, I_0. Received, 21 Dec 1971. 5 ref. 6 fig. 1 tab.

1/1

Acc. Nr: AP0053453 Abstracting Service: CHEMICAL ABST. Ref. Code: CP0366

110556e Use of competing reaction methods for studying alkyl radicals in the liquid phase. III. Reactions with toluene, acetone, acetic acid, and acetonitrile. Safronenko, E. D.; Afanas'ev, I. B. (Gos. Nauch.-Issled. Proekt. Inst. Azotn. Prom. Prod. Org. Sin., Moscow, USSR). *Zh. Org. Khim.* 1970, 6(2), 209–13 (Russ). The reactions of ethylene (I) with $Me(CH_2)_6I$ (II) and RH (R is $MeCOCH_2$, $PhCH_2$, CH_2CO_2H, or CH_2CN) in the presence of free radical forming initiators proceeds as follows: $X\cdot + II \rightarrow XI + Me(CH_2)_6\cdot$ [X is BzO· or $Me_2C(CN)N\cdot$]; $Me(CH_2)_6\cdot + I \rightarrow Me(CH_2)\cdot\cdot$; $Me(CH_2)_6\cdot + II\text{-}k_2 \rightarrow Me(CH_2)_6I + Me(CH_2)_6\cdot$; $Me(CH_2)_6\cdot + RH\text{-}k_1 \rightarrow Me(CH_2)_6Me + R\cdot$. The relative reaction rates (k_1/k_2) at 100° and autogenous I pressure in an autoclave were detd. by a graphical method. From k_1/k_2 values the chain transfer rate consts. were also calcd. for I telomerization with RH. CPJR

1/1

REEL/FRAME
19830478

7

USSR

UDC 547.313.2+547.412.263.4

AFANAS'YEV, I. B., and SAFRONENKO, Ye. D.

"Investigation of the Reactions of Free Alkyl Radicals in Liquid Phase by the Method of Competitive Addition. V. Reactivity of Compounds With Resonant Substituents"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 3, Mar 71, pp 453-457

Abstract: The competitive addition method was used in determining relative reaction rates constants of free n-nonyl radical with chloroacetic and malonic acids at 100° in acetic acid solution. From the ratio of these constants, the chain transfer constants were determined using the formula $C_n = 9.9\ k_1/k_2$. The k_1/k_2 for malonic acid was determined to be 0.0099 ± 0.0037 and for the chloroacetic acid -- 0.0123 ± 0.0021. It was shown that to the first degree of approximation, the effect of halogen substituents on the reactivity of chloro- and bromomethanes in reactions in which the C-H, C-Br, or C-Cl bonds are broken is strictly polar. Methane derivatives with alkyl substituents or substituents with multiple bonds or atoms with unshared pairs of electrons showed a reactivity considerably exceeding the calculated values based on the ionic effect only. An assumption was made that the reactivity is determined not only by the polar but also by the resonance effect of the substituents.

1/1

Free Radicals

UDC 547.313.2+547.222

USSR

AFANAS'YEV, I. B., MAMONTOVA, I. V., and SAMOKHVALOV, G. I., All-Union Scientific Vitamin Research Institute

"Investigation of the Reactions of Free Alkyl Radicals in Liquid Phase by the Method of Competitive Addition. VI. Reactions of sec-Octyl Radicals With Chloromethanes"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 3, Mar 71, pp 457-463

Abstract: The method of competitive addition of free alkyl radicals was applied to the reactions of 4-octyl radical generated by the reaction of ethyl iodide with hexene-1 at 100° in the liquid phase. Relative constants for the rate of splitting the hydrogen atom (k_7/k_3) from methylene chloride (0.0062), chloroform (0.24), ethyl iodide (0.019), and hexene-1 (0.013) were determined, as well as the rates of chlorine (k_8/k_3) being split off from chloroform (0.055) and carbon tetrachloride (23.3). The k_3 unit represents the constant of the rate of the iodine atom splitting from ethyl iodide. On the basis of the data obtained the constants of chain transfer in the reactions of above compounds with hexene-1 have been computed.

1/1

UDC 541.127

USSR

AFANAS'YEV, I. B., All-Union Scientific Research Institute of Vitamins, Moscow

"Correlation Equations in the Kinetics of Free-Radical Reactions"

Moscow, Uspekhi Khimii, Vol 40, No 3, Mar 71, pp 385-416

Abstract: Work on methods of correlation analysis that are applied in the study of free-radical reactions is reviewed (265 references). Application of the equations of Hammett and Taft, of the Alfrey-Price scheme, of Bamford's equation, of correlations based on parameters of quantum mechanics, and of additive empirical methods is considered. On the basis of work done by Afanas'yev and members of his group, in which it was found that constants of chain propagation in telomerization reactions of ethylene with halogen-substituted methanes can be described by the Taft equation, application of a two-parameter Taft equation is proposed for the study of reactions of free radicals with compounds the substituents of which have both a polar and a resonance effect. The resonance constants to be used in the two-parameter Taft equation have been calculated by Afanas'yev et al for a number of substituents (table). The effect of the structure of the transition state on the reactivity of free radicals is considered.

1/1

Free Radicals

USSR UDC 541.515

AFANAS'YEV, I. B., All Union Scientific Vitamine Research Institute, Moscow

"The Relationship Between the Taft Equation Proportionality Constant and the Structure in the Transition State of Free Radical Reactions"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 1, 1972, pp 141-143

Abstract: In continuation of their studies, functional relationships between r^* (a proportionality constant in free radical reactions corresponding to the resonating member) and dissociation energy D(R-H) and proportionality coefficient of the Polanyj-Semenova equation α were determined. Also the ρ^* and r* values were determined for the reaction of Br· and O. An equation was derived showing that the proportionality constant r* of the Taft equation for the pair C_2H_6-CH_4 is about twice as large as all other substituted methanes, i.e., the structures of the transition state of the reaction

$$R\cdot + H\text{-}R' \longrightarrow RH + R'.$$

for RH = C_2H_5-H abd RH = XCH_2-H are actually quite different.

1/1

AFANASYEV G. T.

Acc. Nr: AP0100574 Abstracting Service: 5/70 Ref. Code: UR0414
INTERNAT. AEROSPACE ABST.

A70-22102 # **Sensitivity of ammonium perchlorate to mechanical effects (Chuvstvitel'nost' perkhlorata ammoniia k mekhanicheskim vozdeistviiam).** G. T. Afanas'ev, V. K. Bobolev, and Iu. A. Kazarova. *Fizika Gorenila i Vzryva,* vol. 5, Dec. 1969, p. 491-495. 9 refs. In Russian.

Investigation of the applicability to ammonium perchlorate of the theory that the development of areas of localized heating which initiate an explosion is due to the mechanical disintegration of the explosive and that the melting point of an explosive represents a pressure-dependent boundary of such a locally heated area. Experiments with trotyl and with ammonium perchlorate charges up to 0.7-0.8 mm thick indicate that the mechanism of detonation in ammonium perchlorate is similar to that of secondary explosives and is linked with the mechanical breakdown of the charge which occurs when the pressure becomes equal to or higher than the critical deformation of the charge. V.Z.

1/1

REEL/FRAME
19842009

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109981

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ORIGIN OF PROBABILITY ZONE AND CRIT. CONDITIONS OF THE EXPLOSION INITIATION DURING DEFORMATION IN A CLOSED VOL. WERE INVESTIGATED. UNIFICATION OF THESE PROBLEMS WAS POSSIBLE DUE TO THE USE OF ONLY ONE EXPTL. METHOD. STRENGTH AND CRIT. STRAIN WERE CRIT. CONDITIONS OF THE EXPLOSION INITIATION. CRIT. STRAIN ON FAST TORSION IN A CLOSED VOL. DEPENDS ONLY ON THE THICKNESS OF THE EXPLOSIVE CHARGE.

ZZZZZZZZZZZZ UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--STIMULATED EXPLOSIONS OF SOLID EXPLOSIVES DURING DEFORMATION IN A CLOSED VOLUME -U-

AUTHOR--AFANASYEV, G.T., BOBOLEV, V.K., DOLGOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. GORENIYA VZRYVA 1969, 5(4), 486-91

DATE PUBLISHED-------69

SUBJECT AREAS--ORDNANCE

TOPIC TAGS--SOLID EXPLOSIVE, EXPLOSIVE PROPERTY, EXPLOSIVE CHARGE, MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/2049 STEP NO--UR/0444/69/005/004/0486/0491

CIRC ACCESSION NO--AP0109981

ZZZZZZZZZZZZ UNCLASSIFIED

-USSR

AFANAS'YEV, G. T., et al., Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 299-306

minute. Iron citrate loses first one molecule ($\sim 130^{\circ}$), then the two remaining water molecules ($\sim 165^{\circ}$ C). There is appreciable decomposition and darkening already during the loss of the first molecule of crystallized water. Experiments with mechanical mixtures of iron citrate with citric acid, polymethyl methacrylate, ammonium perchlorate, trotyl, etc. showed the same destruction mechanism. The destruction process during Bowden-Kozlov testing was briefly considered.

Electrical conductivity studies in experiments with the ionic compounds NaCl, $AgNO_3$, and NH_4NO_3 showed that destruction is accompanied by the appearance of conductivity only for rather thin specimens but that the loss or absence of conductivity does not necessarily rule out the existence of a melt on the destruction surfaces. Tests with low-molecular organic substances and polymers revealed conductivity during destruction in the thin layer region. The conductivity is undoubtedly due to heating-up on the destruction surfaces.

2/2

USSR UDC 622.4+541.12.03

AFANAS'YEV, G. T., BOBOLEV, V. K., KAZAROVA, YU. A., and KARABANOV, YU. F. (Moscow)

"Local Heat Formation During Impact Destruction of Thin Layers"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 299-306

Abstract: The authors studied specimens pressed from ground crystalline iron citrate hydrate for purposes of observing the thin layer destruction pattern in materials mechanically similar to explosives. It was found that after impact destruction, bands appear on the contact surfaces which can be regarded as the lines of intersection of these surfaces. To establish the mechanical similarity between iron citrate and explosives, the pressure was measured during impact with disks of varying thickness. The resultant pressure oscillograms are analogous to those for solid explosives.

A derivatographic study was made of the initial substance and part of a specimen after impact for a qualitative understanding of the chemical processes in iron citrate during heating. The heating rate was 15° per

USSR

PELEVINA, I. I. and AFANAS'YEV, G. G., Uspekhi Sovremennoy Biologii, No 1(4) pp 55-71

no one substance or method now known can achieve an identical level of sensitization for a given biological system, i.e., several methods have to be combined. For example, in the case of halogen-substituted desoxyuridins conditions must be created for all the cells to enter the phase of DNA synthesis; cells that do not synthesize DNA might be sensitized by substances that act at the level of cellular protection; anoxic cells can be treated with stable free radicals, etc

2/2

USSR UDC 577.391:616-006

PELEVINA, I. I. and AFANAS'YEV, G. G., Institute of Chemical Physics, Moscow, Academy of Sciences USSR

"Possibilities of Increasing the Radiosensitivity of Cells by Chemical Compounds"

Moscow, Uspekhi Sovremennoy Biologii, No 1(4), pp 55-71

Abstract: The article is a review of the literature on the mechanisms for increasing the radiosensitivity of bacterial and mammalian cells and on the possibility of sensitizing tumor cells. The methods discussed include increasing oxygen tension, lowering the level of cellular protection, change in the molecular structure of DNA, and depression of the repair systems. The capacity for sensitization is limited to the inherent properties of the populations because individual cells as well as organisms are heterogeneous with respect to sensitivity to chemical agents and radiation, as manifested by the differences in their reaction to these factors. The lethal effect of irradiation on cell populations or organisms and the effectiveness of combined exposure to chemical agents and irradiation are confined to the resistant portion of the cell populations or resistant organisms. Consequently,

USSR UDC 576.31

GOTLIB, V. Ya., PELEVINA, I. I., AFANAS'YEV, G. G., and LIPCHINA, L. P., Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"Alteration of the Lethal Irradiation Effect by Means of Chemical Compounds Under Conditions of Cell-Culturing Outside an Organism"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 6, Jun 70, pp 1,367-1,370

Abstract: The possibility of modifying cellular radiosensitivity in tissue culture by means of an inhibitor of radical reactions -- propyl gallate -- was investigated. LL cells were obtained from NKL$_y$ mice, and seven-day monodisperse cell cultures were used. Irradiation was conducted 18 hrs after inoculation of media. PG was added 18 hrs and 15 min prior to irradiation. After 10 days of culturing, cells were stained with toluidine blue and counted. It was determined that identical doses of GP had different effects on the cells, depending on the time of contact prior to irradiation. Contact of 18 hrs resulted in increased radiosensitivity of the experimental cell population and a higher kill ratio, whereas 15 min of exposure resulted in radio-protective action. It was assumed that the metabolic products of PG were important in the sensitization effect. During short exposure, a reaction took place between PG and the radicals formed during irradiation, resulting in their deactivation.

1/1

2/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0137502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE GIVEN ON ANAL. OF GEOCHRONOL. STDS. OF THE SOVIET UNION FOR K-AR AND RB-SR METHODS AND SEVERAL MINERALS OF PRECAMBRIAN PEGMATITE USES AS STD. FOR THE PB ISOTOPIC METHOD OF ABS. AGE DETN. THEY SHOWED A GOOD AGREEMENT WITH CONTROL ANAL. MADE IN VARIOUS LABS. OF THE U.S.S.R. AND BY THE LAB. AT BERN, SWITZERLAND. THE RESULTS OF STUDY OF GEOCHRONOL. STD. BY VARIOUS METHODS INDICATE THAT THE VALUES OF CONSTS. OF PRIME40 K AND PRIME87 RB DECAY APPROVED BY 13 SESSIONS OF THE COMMISSION ON ABS. AGE DETN. (FOR K: LAMBDAK EQUALS 0.0557 TIMES 10 PRIME NEGATIVE9 PER YR AND LAMBDABETA EQUALS 0.472 TIMES 10 PRIME NEGATIVE9 PER YR; FOR RB LAMBDABETA EQUALS 1.39 TIMES 10 PRIME NEGATIVE11 PER YR), SHOULD BE USED IN PRACTICAL WORK UNTIL MORE CERTAIN VALUES FOR THESE CONSTS. ARE DETD. EVERY WORK ON THE ABS. AGE DETN. SHOULD BE ACCOMPANIED BY PRIMARY ANAL. DATA ON THE CONTENT OF PARENTAL AND DERIVATED DECOMPN. PRODUCTS AND BY THE VALUES OF CONSTS. USED DURING AGE CALCN. FACILITY: INST. GEOL. RUD. MESTOROZHD., PETROGR., MINER. GEOKHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DATA ON ANALYSES OF STANDARD GEOCHRONOLOGICAL SAMPLES -U-

AUTHOR-(05)-AFANASYEV, G.D., BRANDT, S.B., BAGDASARYAN, G.P., GOROKHOV, I.M., GUKASYAN, R.KH.

COUNTRY OF INFO--USSR

A

SOURCE--IZV. AKAD. NAUK SSSR, SER. GEOL. 1970, (4), 104-11

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOCHRONOLOGY, POTASSIUM ARGON DATING, LEAD ISOTOPE, ABSOLUTE AGE, EARTH CRUST AGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0411 STEP NO--UR/0011/70/000/004/0104/0111

CIRC ACCESSION NO--AP0137502

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137653

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS PRESENTED WITH 35 REFS. IT INCLUDES THE DATA ON CONSTS. OF RADIOACTIVE DECAY, CHARACTER OF GEOL. INFORMATION OBTAINED BY K-AR DATING AS DEPENDENT ON GEOSTRUCTURAL ENVIRONMENT, AND PLOTTING OF ISOCHRON FOR RB-SR METHOD AND CONCORDANCE CURVE FOR U-PB METHOD. FACILITY: INST. GEOL. RUD. MESTOROZHD., PETOGR., MINER. GEOKHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STATE AND PERSPECTIVES OF RADIOLOGIC STUDIES -U-

AUTHOR-(03)-AFANASYEV, G.D., BRANDT, S.B., GARRIS, M.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR. SER. GEOL. 1970, (4), 69-84

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR GEOPHYSICS, RADIOACTIVE DECAY, GEOLOGY, POTASSIUM ARGON DATING, RADIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0568 STEP NO--UR/0011/70/000/004/0069/0084

CIRC ACCESSION NO--AP0137653

UNCLASSIFIED

USSR UDC 541.67:547.879

PREDVODITELEV, D. A., AFANAS'YEVA, D. N., FILIPPOVICH, YU. B., NIFANT'YEV, E. YE.

"New Method of Synthesis and Stereochemistry of 1,3-alkylene thiophosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 73-77

Abstract: A new procedure is proposed for synthesizing 1,3-alkylene thiophosphites by the sulfohydrolysis of amides of alkylene phosphorous acids. The nuclear magnetic resonance method and thin-layer chromatography were used to detect the phenomenon of stereoisomerism in the series of cyclic thiophosphites. The stereochemical result of synthesizing the thiophosphites depends on the type of initial compound and the chosen reaction. By comparing the calculated and determined dipole moments it was found that the preferred configuration of the 1,3-alkylene phiophosphites is the chair configuration with equatorial orientation of the thiophosphoroyl group.

1/1

USSR

AFANAS'YEV, B. P., Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Energo-mashinostroitel'naya. Podsekts. Parogeneratorostroyeniya, Moscow, 1970, pp 76-84

by the relationship $\phi_L = l_E/l_L$. In this model of the process the combustion zone is divided into two regions: the first where the moles of the combustion products are insufficient and the second where the moles of the fuel mixture are insufficient. The boundary between the regions is related to the transverse cross section of the flame front where the concentrations of combustion products and the fuel mixture averaged over time are equal to one another. It is assumed that the change in concentration follows a law of geometric progression with certain coefficients. A certain layer is picked out to derive the formula for the propagation velocity of the flame front and its mutual exchange between moles of combustion products with neighboring layers is studied considering combustion. According to the result obtained, the propagation rate of the flame front is directly proportional to the pulsation velocity of the flow u' and is a complex function of l_E/l_L and independent of the quantity u_l, the propagation velocity of the laminar front. The computational model is valid for the condition $u' > 6u_l/\phi_L$. N. N. Shirokov.

2/2

USSR

UDC 536.46:533.6

AFANAS'YEV, B. P.

"On Calculating the Propagation Rate of a Turbulent Flame Front in the Surface-Laminar Model"

Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Energomashinostroitel'naya. Podsekts. Parogeneratorostroyeniya (Reports of the Scientific-Technical Conference on Achievements in Scientific Research Work in 1968-1969. Moscow Power Engineering Institute, 1970. Power Machine Building Section. Steam Generator Building Subsection), Moscow, 1969, pp 76-84 (from RZh-Mekhanika, No 5, May 70, Abstract No 5B983)

Translation: The one-dimensional problem is considered for the case of isotropic turbulence under adiabatic process conditions. The instantaneous composition of the combustion zone in any cross section along the surface of the front and on the normal to it is taken to be considerably nonhomogeneous, consisting of turbulent moles of the fuel mixture and moles of the combustion products. It is assumed that each mole exists on a path of scale l_L and has a dimension of the scale l_E, where these scales are related

1/2

USSR

A

UDC 665.642.46-84:53:54

BABIY, V. I., AFANAS'YEV, B. P., IPPOLITOV, A. S., SEMARIN, A. N., BELOSEL'SKIY, B. S. and BOTNIKOV, YA. A.

"Physicochemical Properties of Powdered Coke -- A Product of Thermo-contact Cracking of Petroleum Residues"

V sb. Goreniye tverd. topliva (Combustion of Solid Fuels--Collection of works), T. 1 [Vol. 1], Novosibirsk, "Nauka," 1969, pp 113-118 (from RZh-Khimiya, No 1(II), 10 Jan 70, Abstract No 1 P 162)

Translation: Particles of powdered petroleum coke consist of individual or sintered-together spherical granules. The true density of coke is 1490-1540, the apparent density is 1020-1050 kg/m^3, and porosity is 30-37%; the heaping weight at a working moisture content of 5% is 900-1000 kg/m^3; the angle of slippage in motion is 19°, and the angle of repose is 28°; the coefficient of pulverizability is 0.4% when particles of aluminosilicate catalyst are present in the coke, and 1.13% when they are absent. Methods of combustion of petroleum coke in power boilers are proposed. D. A. Tsikarev

1/1

USSR UDC: 536.46:533.6

AFANAS'YEV, B. P.

"Combustion of a Homogeneous Fuel-Air Mixture in a Turbulent Flow"

V sb. Vopr. teorii goreniya (Problems of Combustion Theory--collection of works), Moscow, "Nauka", 1970, pp 40-51 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B789)

Translation: Assuming Maxwellian distribution of characteristic scales and frequencies in a turbulent flow, different possible relationships are considered between the characteristic thickness of a flame and the scale of turbulence, and also between the rate of reaction and the time of turbulent mixing. Analysis establishes the conditions for development of the volumetric and surface-laminar combustion modes, and also explains the non-unique relationship between the turbulent rate of flame propagation and the parameters of turbulence and laminar combustion rate. V. A. Frost.

1/1

USSR

UDC: 621.396.69:621.319.4

DUKAREVICH, N. Ya., NEYMAN, M. I., AFANAS'YEV, B. N.

"Type K21-7 Low-Voltage High-Frequency Sealed Capacitors Based on Thin Transparent Glass Films"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 2 (19), pp 3-18 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V290)

Translation: The paper describes the design and technique of manufacturing type K21-7 sealed high-frequency glass-film capacitors with a working temperature range of -60 to +155°C for a voltage of 50 V. The results of a study of their electrical characteristics are presented. Authors' abstract.

1/1

USSR

UDC: 621.396.69:621.316.826

AFANAS'YEV, B. K., VOL'FSON, I. B., KARACHENTSEV, A. Ya., PEL'TSMAN, I. P., POMUKHIN, N. P., CHERNYAVSKIY, Yu. M.

"Experience in Developing an Automated Production Line for SN1-1-1 Varistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific and Technical Collection. Technology and Organization of Production), 1970, vyp. 4 (36), pp 3-10 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V412)

Translation: The authors describe a line which excels the level of the best known models in its technological characteristics, level of automation and the number of operations performed. The principle of unification was extensively utilized in designing the line. The line is equipped with a system for accumulating and processing data on the course of the technological process. Resumé.

1/1

Acc. Nr: AP0044039 Ref. Code: UK 0240

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 2, pp 34-38

CHANGES IN THE HUMAN BLOOD SERUM PROTEINS UNDER THE EFFECT OF HIGH TEMPERATURE

B. G. Afanasiev, V. A. Zhestovsky, I. V. Silin

Changes in the blood proteins of man under the effect of high temperature and also in nitrous metabolites were determined by using electrophoresis. Continuous exposure to high temperatures was found to modify but slightly the total blood protein and its fractions, irrespective of the calorific value of the food allowance. Thermal action in conjunction with physical load produced material changes of the protein metabolism in the organism's tissues with but insignificant modifications occurring in the protein fractions of the serum. Changes taking place in the blood serum proteins following exposure to high temperature cannot serve as a hygienic test of modifications occurring in the organism.

1/1

REEL/FRAME
19770485

1th 2

USSR

AFANAS'YEV, B. G. and ZHESTOVSKIY, V. A., Voprosy Pitaniya, Vol 30, No 2, 1971, pp 13-17

of 17-oxycorticosteroids and energy expenditure remained high throughout the experimental period; this indicated a delay in the onset of adaptation. In subjects kept on the subcaloric diet under comfortable environmental conditions, secretion of androgenic corticosteroids increased while that of glucocorticoids decreased; this indicated an intensification of anabolic processes.

2/2

USSR

UDC 612.453-06:(6132.591

AFANAS'YEV, B. G. and ZHESTOVSKIY, V. A., Chiir of Naval and Hospital Therapy, ~~Military Medical~~ Academy imeni S. M. Kirov

"Effects of the Caloric Value of Food on Adrenocortical Functions in Man During Adaptation to High Environmental Temperature"

Moscow, Voprosy Pitaniya, Vol 30, No 2, 1971, pp 13-17

Abstract: Eight men aged 22-25 stayed for 6 days in a thermal chamber at a temperature of 34-36°C and a relative humidity of 80%. Six of these subjects were kept on a subcaloric diet (1,800 Kcal per day) while two received a supracaloric diet (4,000 Kcal). Three more subjects stayed outside the chamber in comfortable surroundings (18-20°C, 40-50% relative humidity), subsisting on the subcaloric diet. The function of the adrenal cortex was assessed through determinations of the amount of 17-oxycorticosteroids and 17-ketosteroids excreted with urine; energy expenditure was measured by the Douglas-Haldane method. In subjects kept on the subcaloric diet in the chamber, glucocortical and androgenic activities began to decline on the 5th day and were soon followed by a fall in energy expenditure; this indicated the onset of adaptation. In subjects kept on the supercaloric diet, urinary excretion

1/2

USSR

AFANAS'YEV, B. G., and ZHESTOVSKIY, V. A., Voprosy Pitaniya, Vol 30, No 3, May/Jun 1971, pp 3-6

a 0.2% solution of citric acid + 25 mg% CKl + 25 mg% $CaCl_2$ + 0.5% sugar, which was varied somewhat after a few days of the experiment. It was man's requirements for organic acids, potassium and calcium salts, and carbohydrates are increased. These requirements undergo changes as the body adapts itself to the heat: the higher the environmental temperature, the greater was the demand for an increase in the concentration of citric acid and salts and a decrease in the sugar concentration of the beverages. The following soft drinks are recommended by the authors: in a desert climate, a 1-2% fruit and berry extract solution or a 0.2% citric acid solution + 25 mg% KCl + 25 mg% $CaCl_2$; in a hot and humid climate, a 1% fruit and berry extract solution or a 0.1-0.2% solution of citric acid + 12.5 to 25 mg% KCl + 12.5 to 25 mg% $CaCl_2$ + 0.25% sugar (or not sugar). It was found to be expedient to cut these concentrations in half during the period of adptation to the heat.

2/2

USSR

UDC 613.36-074

AFANAS'YEV, G., and ZHESTOVSKIY, V. A., Department of Marine Military Service Hygiene of the Military Medicine Academy imeni S. M. Kirov, Leningrad

"A Suitable Chemical Composition of Thirst-Quenching Beverages Overheating"

Moscow, Voprosy Pitaniya, Vol 30, No 3, May/Jun 1971, pp 3-6

Abstract: The duration of well-being of workers in plants where extreme heat conditions provail depends to a large extent on their water intake. The purpose of the present study was to propose an appropriate chemical composition for beverages to be consumed by persons living under various tropical climate conditions. One set of experiments was performed with five young people (four men, one women, 22-30 years of age) who stayed in a desert area for 25 days, with a mean temperature of 36.3°C in the shade, 76°C in the blazing sun, a relative humidity of 13% and a mean air movement of 1.4 m/sec. They were given the following beverages to drink: 1) 0.2% citric acid + 25 mg% KCl + 25 mg% $CaCl_2$; 2) a 1% solution of cherry plum extract; 3) grain kvass, and 4) drinking water. A second set of experiments was done with eight volunteers (eight men, 23-25 years of age) in a thermal chamber at a temperature of 38°C, and a relative humidity of 70-80% (simulation of tropical conditions). Four of these volunteers received only water to drink, the remaining four received

1/2

UDC 612.392.61(98)

USSR

AFANAS'YEV, B. G. and LEBEDEV, M. D., Military Medical Academy imeni S. M. Kirov, Leningrad

"Amount of Common Salt Consumed in the Arctic"

Moscow, Voprosy Pitaniya, No 6, 1972, pp 62-65

Abstract: The consumption of salt with food by 133 young men after 2 1/2 years in the Arctic was found to be twice as high as in temperate regions. Blood pressure, however, changed very little and even tended to decrease. And in 5 persons who had come to the Arctic with elevated pressure, the latter dropped by 5 to 10 mm after 2 1/2 years. The daily urinary output decreased with increasing time spent in the north. The amount of sodium excreted with urine rose and was higher in the winter than in the summer.

1/1

USSR

AFANAS'YEV, B. G., et al., Voprosy Pitaniya, No 1, 1973, pp 3-9

sodium retention, and decreased oxygen consumption. All these phenomena increased resistance to heat and accelerated adaptation.

USSR

UDC 612.591.1-06:[615.322:5[illegible].392+613.3.3[illegible]

AFANAS'YEV, B. G., ZHESTOVSKIY, V. A., MAZUROV, K. V., and MAYEVSKIY, K. L., Academy of Military Medicine im. S. M. Kirov, Leningrad

"Comparison of the Effects of Eleutherococcus and an Acid-Saline Beverage on Adaptation to Intermittent Heat"

Moscow, Voprosy Pitaniya, No 1, 1973, pp 3-9

Abstract: Eight young men were exposed to hot air in a thermal chamber (37.7 to 38.5°C and 75 to 80% relative humidity) for 4 hours a day for 9 days. Four of them drank an extract of eleutherococcus (an adaptogen like ginseng, known to be able to increase nonspecific resistance) 12 days before and during the experiment and unlimited amounts of tap water while in the chamber. The other four drank only a concoction of 0.2% citric acid solution, 3% potassium [illegible] calcium chloride, and 0.5% sugar. Those who drank the eleutherococcus extract exhibited symptoms of a negative water balance, relative and absolute increase in glucocorticoid and androgenic functions of the adrenal cortex, increased sodium excretion with perspiration, and intensified consumption of oxygen. On the other, drinking the special beverage resulted in the establishment of a balance between the intake and elimination of fluid from the body, lowering of the glucocorticoid and androgenic functions of the adrenal cortex, higher

1/2

4

USSR

UDC 621.318.13:621.372.85

BEZMATERNYKH, L. N., SHVARTSMAN, G. I., MASHCHENKO, V. G., AFANAS'YEV, A. P., BOKOV, L. A., PROKHOPOV, A. R., ZAYTSEV, V. A., KUZHELEV, S. M.

"Controllable Delay Lines Based on Yttrium-Garnet Ferrite Rods"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. T. 2 (Thin Magnetic Films, Computer Technology and Radio Engineering--collection of works. Vol 2), Krasnoyarsk, 1971, pp 142-146 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B190)

Translation: The paper presents the results of an experimental study on excitation and propagation of magnetoelastic and magnetostatic waves in yttrium-garnet ferrite rods as applied to their use in controllable delay lines. An analysis is made of relationships for delay time as a function of the external magnetic field when frequency is held constant, delay time as a function of frequency when the magnetic field is held constant, and total insertion losses as a function of delay time. The measurements were made in the frequency range of 560-3 800 MHz. Two illustrations, bibliography of eight titles. A. K.

1/1

USSR

APANASEVICH, P. A., AFANAS'YEV, A. A. et al

"Peculiarities of Induced Combination Scattering in the Resonator of a Laser"

Minsk, Zhurnal Prikladnoy Spektroskopii, Feb 72, pp 256-261

ABSTRACT: Experiments were conducted on the induced combination scattering by benzene, with respect to energy and time, in the resonator of a laser as a function of the thickness of the scattering medium and the length of the resonator. It is shown that the induced combination scattering exercises a significant effect on the operation of a master laser, manifested in a strong deformation of the shape of the pulses, dividing a single pulse into several pulses and increasing the time of oscillation. The maximum coefficient of energy conversion to the first Stokes component reached 20%; in the second it did not exceed 2%. There were no components of induced combination scattering of a higher order.

The article includes 4 figures. There are 5 references.

1/1

USSR

UDC 621.396.69:621.316.[illegible](088.8)

AFANAS'YEV, A. V.

"A Mercury Switch"

USSR Author's Certificate No 258415, Filed 27 Feb 68, Published [illegible]
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V368 P)

Translation: This Author's Certificate introduces a mercury switch which may be used for switching radio bands. The unit consists of upper and lower sections with hermetically sealed contacts which are made of a metal which does not interact with mercury. The movable elements are shifted by mercury. As a distinguishing feature of the patent, the construction is simplified and the reliability of circuit making and breaking is improved by making the movable element in the form of a flat slider with holes clear through for balls of mercury.

1/1

AP0049346

is important but is not the only factor in protective activity so that γ does not depend directly on surface tension. Type I inhibitors are adsorbed due to interaction of π atoms in their aromatic rings with Hg surface and also to the adsorption of Cl^- and Br^- ions on the Hg surface which act as "anionic bridges" for the adsorption of org. cations. Type II inhibitors do not contain halogen ions and thus are only adsorbed by the former mechanism. Addn. of KBr increases γ for a Type II inhibitor, changing it to a Type I. J. E. Scarlett

2/2

19801164

Acc. Nr. AP0049346 Abstracting Service: CHEMICAL ABST. 5/10 Ref. Code UR0365

106494r Technical inhibitors of the acid corrosion of steel studied from electrocapillary curves. Afanas'ev, A. S.; Beilinova, L. A.; Malysheva, T. V. (Dnepropetrovsk. Met. Inst., Dnepropetrovsk, USSR). *Zashch. Metal.* 1970, 6(1), 84-6 (Russ). The relation between the adsorption of surfactants on Hg and their inhibiting action on low-C steel was studied from electrocapillary curves plotted with an Hg electrometer in 20% H_2SO_4 at 25 ± 1° in the range 50-100 mV. The inhibitors were used in amts. of 0.2 wt. %. The type of adsorbed particle was detd. by the max. potential with ($\varphi_{m,i}$) and without ($\varphi_{m,0}$) inhibitors. Cathodic additives gave $\varphi_{m,i} - \varphi_{m,0} = \Delta\varphi_m > 0$ and anodic additives gave $-\Delta\varphi_m < 0$. The stability of adsorption was detd. by the potential at the junction of the branches of electrocapillary curves plotted with and without additives. This corresponds approx. to the potential of desorption φ_{des}. Additives having $\varphi_{des} > +0.5$V were designated as Type I and those with $\varphi_{des} = 0.34$-0.44V, as Type II. For both types there was a relation between the coeff. of corrosion inhibition (γ) and the value $\Delta\varphi_m$. Between $\Delta\varphi_m < 0.2$V and $\Delta\varphi_m > 0.2$V, the value of γ changed sharply. A parallel was observed between adsorption on Hg and protective effect. The value of γ for Type I cationic surfactant was greater than that for Type II. Surface activity

1/2

18

REEL/FRAME
19801163

USSR

AFANAS'YEV, A. P., Sb. nauchn. tr. Chelyabinsk. politekhn. in-ta 1970, No 71, pp 82-90

of idle time for repairing 300 megawatt units by 1 day is equivalent to additional generation of electric power of more than 7 million kilowatt-hours); the quality of the repair operations was improved. For further improvement of the activities of the production-repair enterprises, the following are necessary: development of methods of converting repair enterprises to the new conditions of planning and economic incentive, development of a standard structure of production-repair enterprises, discovery of indexes reflecting the results of the activity of the production-repair enterprises and permitting comparison of them among each other. There are 3 illustrations.

3/3

USSR

AFANAS'YEV, A. P., Sb. nauchn. tr. Chelyabinsk. politekhn. in-ta, 1970, No 71, pp 82-90

thermomechanical but also electrical equipment and absence of high unit power in the system). The creation of production-repair enterprises has offered the possibility of applying progressive technological processes in preparing for and performing the repairs: plasma deposition of heat-resistant alloys on equipment parts, anode-mechanical cutting, internal enamel coating of the heating surface tubes of boilers, bending large-diameter tubes by high-frequency currents, carbon dioxide gas-blanketed welding and argon-blanketed welding, plant repair of water-steam equipment and pumps, large-module replacement of units of repairable assemblies, and performance of all basic equipment repairs by PERT charts. In 1964-1967, the productivity of labor increased: at Chelyabenergoremont, by 23.4%; in Sverdlovenergoremont, 22.6%; in Permenergoremont, by 25%, and in Lenenergo, by 3.5%. During this time, there was a decrease in capital repair costs for boilers and turbines, an increase in the level of profitability and returns on investments, a reduction in idle time repairing equipment (a reduction

2/3

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113558

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TECHNIQUE FOR THE GAS CHROMATOGRAPHIC DETN. OF ETHANE, 1, 2 PROPANE, 2,3 BUTANE(RACEMATE)-, 2, 3 BUTANE (MESO FORM)-, 1,3 BUTANE-, 1,4 BUTANEDIOL AND DIETHYLENE GLYCOL IN DILD. SOLNS. OF ALCS. OR H SUB2 O ALCSS. MIXTS. IS SUGGESTED. SOME CORRELATION OF THE RESPONSE IN A FLAME IONIZATION DETECTOR WITH THE STRUCTURE OF GLYCOL MOLS. IS OBSERVED. THE SEPN. WAS CARRIED OUT ON A 2 M LONG COLUMN FILLED WITH 12- 15PERCENT POLY (ETHYLENE GLYCOL) PEG 600 OR PEG 2000 ON INZ 600 TND SM, SPHEROCHROM 1, OR STERCHAMOL, AT A COLUMN TEMP. OF 105-30DEGREES, WITH N CARRIER GAS AT 80-100DEGREES ML- MIN.

FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DETERMINATION OF GLYCOLS BY GAS LIQUID CHROMATOGRAPHY -U-

AUTHOR-(04)-NOVOSELOV, A.I., AFANASYEV, A.M., KALYAZIN, YE.P., ZAKHAROV, V.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 386-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GLYCOL, CHROMATOGRAPHIC ANALYSIS, PROPANE, ETHANE, BUTANE/(U)PEG600 CHROMATOGRAPH PACKING, (U)PE62000 CHROMATOGRAPH PACKING, (U)INZ600 CHROMATOGRAPH PACKING, (U)TNDSM CHROMATOGRAPH PACKING, (U)SPHEROCAROMI CHROMATOGRAPH PACK, (U)STERCHAMOL CHROMATOGRAPH PACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0687 STEP NO--UR/0075/70/025/002/0386/0388

CIRC ACCESSION NO--AP0113558

UNCLASSIFIED

Acc. Nr: AP0038034 A Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Éksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 115-123

AN INVESTIGATION OF SUPERMAGNETISM OF FERROMAGNETIC PARTICLES BY MOSSBAUER SPECTROSCOPY

~~Afanas'yev, A. M.~~; Suzdalev, I. P.; Gen, M. Ya.; Gol'danskiy, V. I.; Korneyev, V. P.

A theoretical and experimental investigation of supermagnetism of ferromagnetic spherical particles is carried out. It is found that the anisotropy energy (relaxation time) drops to zero for crystals with cubic symmetry at particle dimensions of the order of a certain d_{cr} and then begins to increase with increase of particle size due to turning of the magnetic moments of separate atoms with respect to each other. In is also shown that this phenomenon is not observed in uniaxial crystals. An investigation by Mossbauer spectroscopy of particles of the ferromagnetic alloy FeNi (37% Ni) with a face centered cubic lattice (the particle size varied between 800 and 120 A) revealed a pronounced anomoly in the hyperfine structure of 190 and 120 A particle spectra; this confirms the theoretical dependence of anisotropy energy on the particle size.

//

REEL/FRAME
19731076

21

08

2/2 018 UNCLASSIFIED PROCESSING DATE--[illegible]

CIRC ACCESSION NO--AP3052121

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THIS TYPE OF INTERFERENCE CAN DISPLAY ITSELF FOR E2 AND M1 NUCLEAR TRANSITIONS IF ONE STUDIES THE ANGULAR DISTRIBUTION OF THE ELECTRON PRODUCED BY THE GAMMA RAYS RATHER THAN THE TOTAL ABSORPTION. FACILITY: KURCHATOV INST. OF ATOMIC ENERGY, MOSCOW.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--INTERFERENCE OF NUCLEAR RESONANCE ELECTRON PRODUCTION AND PHOTOEFFECT FOR MOESSBAUER E2 AND M1 GAMMA RAYS -U-

AUTHOR-(02)-AFANASEV, A.M., KAGAN, YU.

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETT.; 31A: 38-9(JAN. 12, 1970)

DATE PUBLISHED--12JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MOSSBAUER SPECTRUM, PHOTO NUCLEAR REACTION, NUCLEAR RESONANCE, PHOTOELECTRON, ELECTRON SPECTRUM, ANGULAR DISTRIBUTION, INTERFERENCE MEASUREMENT, GAMMA RAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0661 STEP NO--NE/0030/70/031/009/0044/0039

CIRC ACCESSION NO--AP0052121

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 023

CIRC ACCESSION NO--AP0102210

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THIS TYPE OF INTERFERENCE CAN DISPLAY ITSELF FOR E2 AND M1 NUCLEAR TRANSITIONS IF ONE STUDIES THE ANGULAR DISTRIBUTION OF THE ELECTRON PRODUCED BY THE GAMMA RAYS RATHER THAN THE TOTAL ABSORPTION.

FACILITY: I. V. KURCHATOV INST. ATOMIC ENERGY, MOSCOW,. USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INTERFERENCE OF NUCLEAR RESONANCE ELECTRON PRODUCTION AND PHOTOEFFECT FOR MOSSBAUER E2 AND M1 GAMMA RAYS -U-

AUTHOR-(02)-AFANASEV, A.M., KAGAN, YU.

A

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETTERS (NETHERLANDS), VOL. 30A, NO. 1, P. 38-9, 12 JAN, 1970

DATE PUBLISHED--12JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTONUCLEAR REACTION, MOSSBAUER EFFECT, TRANSITION RADIATION, ELECTRON SPECTRUM, ANGULAR DISTRIBUTION, INTERFERENCE MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0122 STEP NO--NE/0000/70/030/001/0038/0039

CIRC ACCESSION NO--AP0102210

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0101555

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE INTERFERENCE IS MANIFESTED IN THE ANGULAR DISTRIBUTION OF THE ELECTRON PRODUCED BY THE X RAYS RATHER THAN IN THE ABSORPTION SPECTRUM. ALTHOUGH THE DISTRIBUTION OF EMITTED ELECTORNS IS DIFFERENT FOR THE PHOTOEFFECT AND THE NUCLEAR PROCESS, THE INTERFERENCE IS OBSERVABLE COMPLETELY IF THE ELECTRON MOMENTUM DIRECTION IS FIXED. THE ENERGY DEPENDENCE OF THE (GAMMA E) REACTION HAS A SYM. CHARACTER BOTH FOR E2 AND M1 TRANSITIONS. A COMPARISON OF THE ANGULAR DEPENDENCE FOR THE INTERFERENCE TERM WITH THAT FOR THE INTERNAL CONVERSION PROVIDES A CHOIDE OF AN OPTIMAL DIRECTION IN WHICH THE EFFECT WILL BE THE LARGEST. THE MEASUREMENT OF THE ELECTRON ANGULAR DISTRIBUTION GIVES A NEW POSSIBILITY OF EXPTL. INVESTIGATION OF THE INTERFERENCE FOR A WIDE SER OF NUCLEI. CRUDE ESTNS. GIVE THE ALRGEST EFFECTS FOR PRIME166 ER (80.5 KEV), PRIME170 YB (84.3 KEV), PRIME160 DY (86.8 KEV) E2 MOESSBAUER GAMMA QUANTA AND FOR PRIME169 TM (8.4 KEV) AND 151 EU (21.6 KEV) M1 TRANSITIONS.

FACILITY: I. V. KURCHATOV INST. AT. ENERGY, MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INTERFERENCY OF NUCLEAR RESONANCE ELECTRON PRODUCTION AND PHOTOEFFECT FOR MOESSBAUER E2 AND M1 GAMMA RAYS -U-

AUTHOR-(02)-AFANASEV, A.M., KAGAN, YU.

A

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETT. A 1970, 31(1), 38-9

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--MOESSBAUER SPECTRUM, NUCLEAR RESONANCE, ANGULAR DISTRIBUTION, INTERFERENCY MEASUREMENT, ELECTORN SPECTRUM, PHOTONUCLEAR REACTION, ERBIUM ISOTOPE, YITTERBIUM ISOTOPE, DYSPROSIUM ISOTOPE, EUROPIUM ISOTOPE, THULIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1469 STEP NO--NE/0000/70/031/001/0038/0039

CIRC ACCESSION NO--AP0101555

UNCLASSIFIED

USSR

IMSHENNIK, V. K. et al., Fizika Tverdogo Tela, Vol 15, No 9, Sep 73, pp 2656-2660

phenomenon. It is also shown that the relation between P_1 and P_2 gives information on the anisotropy of oscillations of the ligands in the complex.
The authors thank Yu. F. Krupyanskiy for valuable advice and comments.

USSR

IMSHENNIK, V. K., AFANAS'YEV, A. M., GOL'DANSKIY, V. I., MAKAROV, Ye. F., PLACHINDA, A. S., SUZDALEV, I. P., Institute of Chemical Physics, USSR Academy of Sciences

"Investigation of the Dynamic and Static Distortions of Complexes by Using Gamma-Resonance Spectroscopy"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 9, Sep 73, pp 2656-2660

Abstract: Gamma-resonance spectroscopy is used to study dilute paramagnetics -- a frozen aqueous solution of $FeCl_3$ (0.1 M $FeCl_3$ and 8.3 M HCl) and a hydrated iron-containing sulforesin at a temperature of 90°K in an external magnetic field of 450 oersteds. A computer was used to separate three relaxation times τ_{S_z} corresponding to the Kramers doublets, $S_z = \pm 5/2, \pm 3/2, \pm 1/2$, and also to determine the parameter λ describing departure of the crystal field from the axially symmetric. An attempt is made to relate the quantity λ to static distortion of the complex. From the fact that the three relaxation times are related through two parameters P_1 and P_2, it is concluded that spin-lattice relaxation is a two-phonon

1/2

USSR

UDC: 611.774.3

AFANAS'YEVA, A. K., KOZLOVSKAYA, V. P., CHALIKOV, V. V.

"Study of the Structure and Properties of Drilling Pipe of Aluminum Alloys Produced by Rolling"

Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 3, 1973, pp 120-126.

Abstract: Results are presented from a study of the influence of the temperature and deformation mode of the rolling process on the structure and properties of pipe of various aluminum alloys with periodically changing cross section. Small diameter pipe was studied, produced by rolling by hot-pressed blank. Pipe made of aluminum alloys D16 and 01953 by rolling, a new, highly productive method, satisfies the requirements of the technical conditions for pressed drilling pipe. The rolled pipes have the following advantages over pressed pipe: lower anisotropy of mechanical properties, double the endurance limit of the transition zone with sign-changing load, and higher corrosion-wear resistance. Rolled drilling pipe should be used in prospecting drilling, where the influence of corrosive media is not a decisive influence due to the brief cycle of use.

1/1

USSR UDC: 621.317.7.087.92-932

AFANAS'YEV, A. I.

"An Interference-Resistant Converter Which Changes Small Resistance Differences Into Frequency"

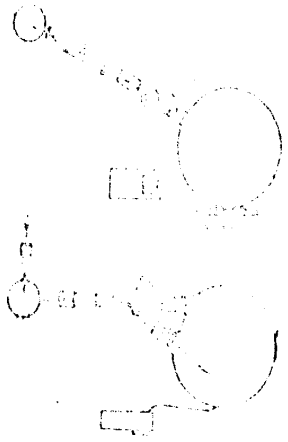
Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 107, pp 128-132 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9, Sep 72, Abstract No 9A122)

Translation: The paper describes a converter which changes small resistance differences to frequency. The device combines high interference immunity with stability of the transfer ratio. Stability of the transfer ratio is attained by connecting a single-component phase-synchronized filter in the controlling feedback circuit. The tuning frequency of the filter changes together with the frequency of the converter. Technical specifications are given on a converter designed for measuring small temperature differences. Two illustrations, bibliography of three titles. N. S.

1/1

USSR

AFANAS'YEV, L. F., AFANAS'YEV, A. F., USSR Author's Certificate No 333617



2/2

USSR

UDC: 535.65.063.6

AFANAS'YEV, L. F., AFANAS'YEV, A. F.

"A Polarization Color Comparator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333017, Division G, filed 29 Jul 70, published 21 Mar 72, p 161

Translation: This Author's Certificate introduces a polarization color comparator designed chiefly for measuring the color difference of diamonds. The device contains a light source, an optical system with modulator, a cartridge with light filter, a photocell and an electronic circuit. As a distinguishing feature of the patent, the discrimination sensitivity of the device is improved by equipping the optical system with a polarizer and two analyzers whose axes are turned through an angle of 90° relative to one another and inclined at the Brewster angle to the test surface.

1/2

Optics & Spectroscopy

USSR

APANASEVICH, P. A.; AFANAS'YEV, A. A.

"Four-Photon Induced Raman Emission in Resonant Media"

Leningrad, Optika i Spektroskopiya; August, 1972; pp 300-7

ABSTRACT: The authors studied four-photon Raman emission during the propagation of a quasi-stationary current in a resonant medium. In the vicinity of a constant, strong field small increases of the weak waves were found in cases in which the interacting waves differed in frequency and (or) direction of propagation. The authors determined the angles and frequencies for which induced Raman emission is the most distinct. It was shown that in the case in which a strong field consists of several waves the increase in the weak current appears as the sum of the contributions of all of the strong waves and their pairs; however, these contributions do not depend on the phase of the interacting waves.

The article includes 29 equations and two figures. There are 21 references.

1/1

USSR

AFANAS'YEV. A. A., Tr. Kazan. aviats. in-ta, 1972, vyp 147, pp 38-44

and continuity. The necessary conditions of the extremum of the functional were obtained which define the optimal distribution of v_w. A means of approximate solution by the method of successive descent was noted. The bibliography has 8 entries.

2/2

USSR

UDC 532.526

AFANAS'YEV, A. A.

"Optimal Blowout of a Foreign Liquid Into the Boundary Layer"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1972, vyp. 147, pp 38-44 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6B688)

Translation: The variation problem is formulated for finding the optimal (from the point of view of reducing drag) distribution along the length of a body of the blowing velocity v_w of a foreign liquid into the boundary layer on a penetrable surface under given isoperimetric conditions imposed on the function of v_w and relations defined by the equations of motion and the boundary conditions. The paper is a development of the studies by T. K. Sirazetdinov (see Izv. vyssh. uchebn. zavedeniy. Aviats. tekhn. (News of the Higher Institutions of Learning. Aviation Engineering), 1969, No 3, pp 5-13 -- RZh-Mekhanika, 1970, Abstract No 4B845) as applied to the case of the existence inside the boundary layer of an interface between the blown liquid and the oncoming flow. The functional was compiled which depends on the variation along the length of the body of the linear combined friction on the surface and the velocity v_w and including (via the Lagrange factor) the equations of motion

1/2

USSR

UDC 621.385.2

AFANASOV, S. G., ASHBEL', I. YA.

"Distinctive Feature of Impedance Characteristics of Spherical Diode with External Cathode"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 2, pp 62-74 (from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A120)

Translation: A computation is performed for the impedance characteristics of a spherical diode (SD) with an external cathode (i.e., computation of the active and reactive components of the impedance of a diode) with the assumption of smallness of the high-frequency disturbing effect with respect to the d-c voltage of the SD. A comparison of the computed impedance characteristics of a SD with the corresponding characteristics of a plane diode shows that with a SD with an exterior cathode, the negative active component of the impedance is considerably larger with respect to absolute magnitude. The possibility is considered of the practical use of SD as a reactive element for control of frequency oscillatory systems. 4 ref. Summary.

1/1

Oscillators and Modulators

USSR UDC: 621.373.4.029.6.001.5

AFANASOV, S. G., CHEREDNIK, V. I.

"On the Feasibility of Using Drift Effects in the Grid-Anode Space of a Triode for Generating Microwave Electromagnetic Oscillations"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 127-131

Abstract: The authors discuss the possibility of using a triode for generating microwaves in a mode analogous to the operating mode of an avalanche-drift diode oscillator. The impedance of the grid-anode space is calculated. The resistive and reactive components of the impedance are calculated as functions of the drift angle. The calculations are done for the low-amplitude region. The impedance is computed in the cathode-grid space as well with regard to drift effects. An arbitrary phase relation is assumed between the voltages across both spaces. Two figures, bibliography of eight titles.

1/1

AP 0018964 CHEMICAL ABST. 1/70 UR0207

A

15804a **Generalized shock adiabat of condensed substances.** Afanasenkov, A. N.; Bogomolov, V. M.; Voskoboinikov, I. M. (USSR). *Zh. Prikl. Mekh. Tekh. Fiz.* 1969, (4), 137–41 (Russ). Calcns. of the shock adiabat in nonporous binary mixts., porous compds., and liqs. are reviewed. Examples include TNT/hexogen(40/60), NaCl, benzene, and acetone. 24 refs.

E. E. Toops, Jr.

1/1

19610595

1/1

2/2 056 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0121204

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIG. 1. DISTRIBUTION OF BAR UW IN TUBE SECTION. FIG. 2. DISTRIBUTION OF LONGITUDINAL FLUCTUATION INTENSITY. FIG. 3. INTENSITY DISTRIBUTION OF TRANSVERSE VELOCITY AND SHEAR STRESSES FLUCTUATION. FIG. 4. PROFILE OF AVERAGED VELOCITY. FIG. 5. DISTRIBUTION OF TRANSVERSE HEAT FLUXES. FIG. 6. DISTRIBUTION OF AZIMUTHAL HEAT FLUXES. FIG. 7. DISTRIBUTION OF LONGITUDINAL HEAT FLUXES. FIG. 8. AVERAGED TEMPERATURE PROFILE. SUMMARY. NON ISOTHERMAL FULLY DEVELOPED FLOW OF GAS IN A CIRCULAR ROTATING TUBE IS CONSIDERED. AVERAGE EQUATIONS OF MOMENTUM AND HEAT TRANSFER AND EQUATIONS FOR ONE POINT SECOND MOMENTS OF VELOCITY AND TEMPERATURE FLUCTUATIONS ARE USED. DETERMINED ARE THE BASIC HEAT TRANSFER CHARACTERISTICS SUCH AS THE PROFILE OF AVERAGED TEMPERATURE AND FLUCTUATION HEAT FLUXES. THE RESULTS OF NUMERICAL CALCULATION OF THE CHARACTERISTICS ARE GIVEN.

UNCLASSIFIED

1/2 056 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--TURBULENT ANISOTROPIC FLOW OF INCOMPRESSIBLE GAS IN A CIRCULAR ROTATING TUBE -U-

AUTHOR-(03)-KOLOVANDIN, B.A., MARTYNENKO, O.G., AEROV, V.YE.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO-FIZICHESKIY ZHURNAL, 1970, VOL 18, NR 1, PP 96-104

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TURBULENT FLOW, INCOMPRESSIBLE FLUID, GAS FLOW, GAS DYNAMICS, CIRCULAR ACCELERATOR, KINETIC EQUATION, HEAT TRANSFER, VELOCITY, MATHEMATIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0532 STEP NO--UR/0170/70/018/001/0096/0104

CIRC ACCESSION NO--AP0121204

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0109712

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN THE DISTANCES BETWEEN THE SLITS WERE REDUCED TO SMALLER THAN OR EQUAL TO MM AND THOSE BETWEEN THE ORIFICES TO SMALLER THAN OR EQUAL TO 5 MM, THE FOAM LAYER FORMED ON GRIDS OR PERFORATED PLATES OF SMALL DIAM., RESP., WAS VERY UNSTABLE, CONTG. EXCESSIVE AMTS. ON GASES. BY PASS GAS STREAMS WERE THUS FORMED, TAKING NO PART IN THE MASS TRANSFER ON THE PLATES AND GREATLY DECREASING THE EFFICIENCY.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--SOME FACTORS AFFECTING MASS TRANSFER IN THE GAS PHASE ON GRID PLATES -U-

AUTHOR-(03)-KOLTUNOVA, L.N., AEROV, M.W., BYSTROVA, T.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(3), 31-3

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--MASS TRANSFER, ELECTRON TUBE GRID, GAS PHASE REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1751 STEP NO--UR/0065/70/015/003/0031/0033

CIRC ACCESSION NO--AP0109712

UNCLASSIFIED